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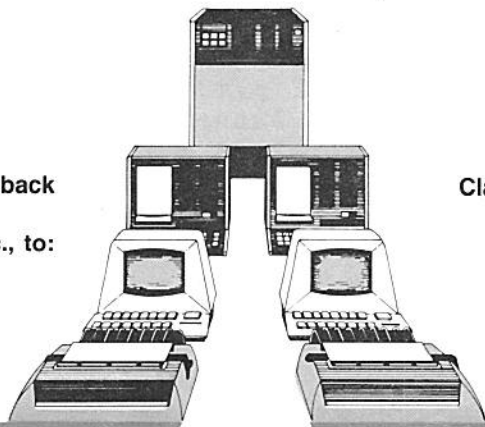
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BENCHMARKS Reader/User feedback is encouraged.

Send all letters, suggestions, etc., to:
North Texas State University
The Computing Center
NT Station, Box 13495
Denton, Texas 76203



Claudia Lynch, BENCHMARKS Editor
Richard Harris
Director of Computer Systems
Thomas Wm. Madron
Manager, Computer Services
Robert G. Brookshire
Manager,
Academic Computing Services

Services Available to Users of the NTSU Computing Facilities

The NTSU Computing Center is located in the Information Sciences Building, Room 119. Telephone: (817) 565-2324.

INFORMATION AND ID CODES - Carolyn Goodman

BENCHMARKS QUESTIONS/CONTRIBUTIONS, ETC. - Bob Brookshire

STATISTICAL/RESEARCH SUPPORT - George Morrow, Victor Loos

STUDENT PROGRAMMING PROBLEMS - CSCI Department, Room 550L, GAB
BCIS Department, Room 152, BA

JCL & DEBUGGING PROBLEMS - George Morrow

PRE-RESEARCH COUNSELING - George Morrow, Victor Loos

DATA ENTRY & KEYPUNCH - Betty Grise

TEST SCORING & ANALYSIS - Betty Grise

PASSWORD AND DISK SPACE PROBLEMS - Carolyn Goodman

MVS, CMS & MUSIC OPERATING SYSTEM PROBLEMS - Steve Glick

VAX 11/780 VMS OPERATING SYSTEM PROBLEMS - Kim Stickney

HP-2000 OPERATING SYSTEM PROBLEMS - Jeff Brooks

ADMINISTRATIVE APPLICATIONS - Coy Hoggard

NAS 8040 BILLING PROBLEMS - Sandy Franklin

JOB SUBMISSION & RETRIEVAL - RJE Operators

Summer Computing Hours

Computing facilities will be open during the following hours throughout the Summer Semesters (not applicable to holidays):

Computing Center RJE:	7 a.m. Monday - Midnight Saturday Noon - Midnight Sunday
ISB 110 Terminal Area:	Monday - Thursday, 7:30 a.m. - Midnight Friday, 7:30 a.m. - 6 p.m. Saturday, 8:30 a.m. - 7 p.m. Sunday, 2 p.m. - 10 p.m.
College of Business:	Monday - Saturday, 8:15 - Midnight Sunday, 12:15 p.m. - Midnight
Room 550, GAB:	Monday - Thursday, 8 a.m. - Midnight Friday, 8 a.m. - 10 p.m. Saturday, Noon - 8 p.m. Sunday, 2 p.m. - Midnight

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User Help Desk Scheduled for Summer

The necessary funds have been procured to allow the Computing Center to install a User Help Desk in Room 110 of the ISB through both of the Summer semesters. The employees on duty will provide the following services to the university's computing community.

1. Handle phone calls from faculty, staff, and students seeking computing assistance. These calls will either be dealt with directly by a Help Desk employee or forwarded to the appropriate Computing Center personnel.
2. Monitor the ISB 110 Terminal Room. This function includes ensuring the smooth operation of all hardware in the room, helping terminal users with hardware problems, and supervising the traffic flow in and out of the room.
3. Consult with users. The extent to which consulting will be done at the Help Desk has yet to be determined and will depend on such issues as the amount of time the employees have to devote to it. However, our employees will have the training and expertise to make a consulting function within their range of capabilities.

The Help Desk service is designed to provide the university with an informed, centralized system of user assistance. If it proves to be a worthwhile experience, there is the chance that it could become a permanent service and increase our effectiveness in satisfying your computing needs. The phone number(s) to put you in touch with the Help Desk will be posted in the MUSIC, VAX, and HP system news before the service begins on June 6, the first day of Summer classes. The Help Desk hours will be essentially the same as the Science and Technology Library which are:

Sunday: 2 p.m. until 10 p.m.
Monday-Thursday: 7:30 a.m. until 10 p.m.
Friday: 7:30 a.m. until 6 p.m.
Saturday: 8:30 a.m. until 7 p.m.

VSAM Comes to NTSU

By Dan Hood, Technical Support Team

EDITORS NOTE: This is a reprint of an article that appeared in the Jan/Feb 1984 issue of BENCHMARKS, Volume 5, Number 1.

Implementation of MVS/SP 1.3 as the batch operating system on the NAS 8040 allows users of that system to take advantage of IBM's Virtual Storage Access Method (VSAM). Use of VSAM requires some special user care and effort as described below.

VSAM datasets are created and deleted by use of the IBM Access Methods Services utility IDCAMS. VSAM datasets must be cataloged in a VSAM catalog. On our system, VSAM datasets will automatically be cataloged in a VSAM user catalog.

On the 8040, all user VSAM datasets must follow the naming convention given below. They must reside on an ACADxx pack. Users may create their own VSAM objects on these packs using IDCAMS. VSAM objects not meeting these requirements will be scratched without backup.

The naming convention is:

USRV.userid.name

where USRV is the required high level index name
userid is the userid of the user creating the
dataset name is further qualifiers chosen by the
user.

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Computing Hours Between Semesters

The following hours will be in effect between semesters (May 12 - June 6):

Computing Center RJE: OPEN: Monday - Saturday, 8 AM - Midnight
CLOSED: All day Sundays.

ISB 110 Terminal Area: OPEN: Monday - Friday, 8 AM - 5 PM
CLOSED: All day Sundays.

College of Business: CLOSES: 8 PM Friday, May 11
REOPENS 8AM Wednesday, June 6

Room 550, GAB: CLOSED: 10 PM Friday, May 11
REOPENS: 8 AM Wednesday, June 6

Backup Schedule for OS/MVS

OS/MVS disk packs (academic and administrative) are backed up daily, Tuesday through Saturday, from 4-6:30 a.m., and Sunday from Midnight to 3 a.m. A backup of all the operating systems and their contents is done once every two weeks at some low activity period over a weekend.

NAS/8040 Performance Statistics for April

SYSTEM	SCHEDULED OPERATING HOURS	PLANNED MAINT. HOURS	PLANNED PRODUCTION HOURS	UNPLANNED MAINT. HOURS	PRODUCTION HOURS ACHIEVED	SYSTEM UPTIME
VM/SP2	720	2.90	717.10	3.65	713.45	99.5%
MUSIC	720	24.56	695.44	6.47	688.97	99.1%
MVS/JES2	720	4.45	715.55	7.22	708.83	99.0%
COMPLETEA	720	4.55	715.45	9.07	706.38	98.7%

CPU availability equals approximately 99.6% uptime.

System Uptime=(Production Hrs Achieved)/(Planned Production Hrs)

Production Hrs Achieved = (Planned Production)-(Unplanned Maint.)

Scheduled Operating Hrs = (Planned Maint.) + (Planned Production)

MUSIC Planned Maintenance Hours include 20.47 hrs system backup.

Lost productivity is calculated as the greatest amount of elapsed time that any one of the production systems was unavailable for scheduled operation. Lost productivity hours were contributed to by the following key causes:

CPU, Tape, and Disk Subsystems (NAS)

1. Increase CPU to 12 Meg. of Main Storage	2.66 HOURS
2. Connect Power Control Cables to CPU	1.75

TOTAL	4.41 HOURS

Miscellaneous

1. Undetermined Causes for Systems Restarts	5.87 HOURS
2. VM/SP2 System Tuning/Improvements	1.74
3. UPS Electrical Power Disruptions	2.42
4. Reset CPU Clock to Daylightsaving time	0.14

TOTAL	10.17 HOURS

GRAND TOTAL 14.58 HOURS

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Research Programmer Needed

The Computing Center is still accepting applications for the position of Research Programmer. This is a full-time professional position which involves consulting with faculty and graduate students on a variety of computer applications, as well as programming tasks within the Computing Center. An excellent command of both written and oral English is required. Applicants should possess skills in a combination of two or more of the following areas: research design, data analysis, multivariate statistics, statistical software; high-level language programming, especially FORTRAN, COBOL, OS/MVS JCL and/or PL/I; assembly language programming, especially 8080/86/88 and/or System 370. A bachelor's degree is required; advanced degree preferred. For further information, contact the Personnel Office, North Texas State University, 76203.

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Dialing Up NTSU Computers Over the Telephone

Phone numbers for the local area network are:

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(817) 565 - 3499
              3899
              3966
              3989
              3999
              4025
              4030
D/FW METRO 429 - 6006

```

All the numbers EXCEPT 565-4030 are for 300 baud communications. The 565-4030 number will accept either 1200 or 300 baud communications. It has an autobaud feature that requires the user to hit the <RETURN> key repeatedly until the receiving modem can determine the appropriate baud rate. After a communications link has been successfully established, the user will receive the # prompt. At this point, it will be necessary to issue the appropriate CALL command to connect with a computer.

CALL 8040 will connect with MUSIC
CALL 8300 will connect with MUSIC at 300 baud
CALL 3270 will connect with MUSIC through the 3270
 protocol converter
CALL A780 will connect with VAX system A
CALL B780 will connect with VAX system B
CALL 2000 will connect with the HP-2000 computer

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MUSIC Backup Hours

A message will be sent to all users signed on to MUSIC approximately 10 minutes before backups are begun. It will be in the form * * MUSIC SHUT DOWN AT xxxx AM - SCHEDULED BACKUP **. To find out the backup hours while signed on to MUSIC, enter HELP HOURS. The following backup schedule is currently in effect:

Tuesday	3 a.m. (for about 3 hours)	Weekly backup
Wednesday - Saturday	4 a.m. (for about 2 hours)	Daily backup
Saturday	Midnight (for about 2 hours)	Daily backup

MUSIC Class IDs Deleted

All MUSIC ID codes that were assigned for classroom use during the Spring semester have been deleted from the system as of Monday, May 14. If you need a personal ID code, you must apply for one at the Computing Center Reception Area, ISB 119.

Notes on Using Direct Access in Cobol Programs*

By Steve Glick, Technical Support Staff

The 'Relative File' organization may be used when executing COBOL programs on MUSIC. Relative File organization is a direct access technique in which the records of the file are numbered 0,1,2.... This number is called the 'Nominal Key'. Records can be read (by the READ Statement) and updated (by the REWRITE Statement) randomly by specifying the Nominal Key. A relative file may also be read (via the READ Statement) and written (WRITE Statement) sequentially; in fact, they are normally created using sequential writes. This creates a problem for MUSIC, because sequential access is done using the Basic Sequential Access Method (BSAM), while random access is performed with the Basic Direct Access Method (BDAM). Under MUSIC, these two access methods store records differently on disk. Under certain circumstances, though, the format of the data is the same: The record format must be 'F', and the LRECL must be a multiple of 512.

For this reason, the /FILE statement defining a COBOL relative record file which is being created sequentially must specify RECFM(F) and LRECL(n), where n is the record length used in the COBOL program, rounded up to a multiple of 512. For example, if a COBOL program uses a logical record length of 100, the MUSIC Save Library File or Temporary UDS file must be created as RECFM(F) LRECL(512).

Three sample programs showing how to use relative record files to achieve direct access in COBOL are stored as public files on MUSIC. They are named DIRECT.COBOL1, DIRECT.COBOL2, and DIRECT.COBOL3. To run these sample programs, type:

```
EDIT DIRECT.COBOL1
SAVE DIRECT.COBOL1,PRIV
```

This will save the file DIRECT.COBOL1 as a Save Library file on your ID Code, so you may run the examples as well as make modifications to the code.

*Thanks to The MUSIC Users's Group for this information.

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VAX Backup Schedule

Incremental backups of both VAX systems are performed Monday through Thursday at 5 p.m. Any files that have been created or changed are backed up. Users do not have to log out, but any files that are open at the time of the backup will NOT be backed up.

Full backups of both systems are done every Friday at 5 p.m. Again, users do not have to log out, but any files that are open will NOT be backed up.

A "stand alone" backup of both systems is done on the last working day of the month. During this time, all system software, as well as user files, are backed up. The systems must be taken down for this backup, which will usually not last more than 1/2 hour. All users that are logged on will be warned of the impending backup, and must log out.

NOTE: No backups are taken on the weekends. Requests for restoration of files should be made via MAIL to the username OP00.

VAX Accounts Closed

All VAX accounts were closed as of Monday, May 14. To get a summer account, you must reapply at the Computing Center Reception Area, ISB 119.

Interystem Data Transfers

by Kim Stickney, VAX Administrator

This article describes various methods for transferring text files between VAX/VMS and 8040 computers. Users may wish to do this for the following reasons:

1. Source code transfers of FORTRAN, C, PASCAL etc. programs may be useful so a program running on one machine can be run on the other(s). Users attempting to get programs working on machines other than those they were computing d on must expect to deal with various system-dependant differences and problems which may be considerable.
2. Document transfers may be desirable, particularly for access to output devices such as the Laser Printer. In the Fall of 1984 there should be a capability for sending VAX/VMS files to the Laser Printer using special hardware communications lines and dedicated software. In the meantime, limited document transfer requests will be accepted, for finished, final copies only (no draft copies please).
3. Database transfers. Files full of analytical or statistical data may be needed for input to programs available on one or the other machines. Binary encoded data files will probably not transfer successfully. Again, users should expect to have to deal with any necessary data reformatting on the target machine.

The rule of thumb for a successful data transfer is that the file should contain only printable characters. VAX system operators are prepared to move small to medium sized files using serial line communication programs which utilize the Local Area Network. Large files/datasets should be transferred using a magtape procedure described in the M.U.S.I.C. public file U.CARDVAX which explains the block and record requirements for writing an ASCII tape readable on the VAX magtape drive. Here is the procedure for transferring smaller files:

1. Using the VAX/VMS MAIL utility, send mail to OP00 stating who you are, and that you wish to have files transferred between the 8040 and 11/780 systems. This may be done from either system A or system B.
2. Provide the operator with a M.U.S.I.C. account name and password. It is recommended that you change your password prior to this request, and then change it again after the request is filfilled.

3. Indicate the direction of the file transfer (8040 to 11/780, or 11/780 to 8040) and filenames. Operators are authorized to move only files in the VAX account from which you sent the request via MAIL, or from the M.U.S.I.C. account whose name and password you specified.

In most cases, the request will be fulfilled in the same day. Transfers from the 8040 to VAX/VMS are done by LISTing the file (after setting a dumb terminal type to avoid the MORE... prompt) and saving the output in a VAX file. Transfers to the 8040 from VAX/VMS are done by sending a VAX file to the TEDIT editor and saving the input buffer in the user's library. This procedure works reliably for printable characters, but the TEDIT restriction disallowing blank lines must be dealt with by the user. One way is to put a printing character in the first column of every blank line if the line is desired; otherwise the blank line will be discarded by the transfer program on the VAX to avoid putting TEDIT back into EDIT mode prematurely.

If you have further questions, they may be directed to the VAX operators at 565-4161.

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Communications Programs For Micros

The Computing Center has recently evaluated two terminal emulation programs for microcomputers: CROSSTALK for 8088 systems running MS-DOS and TeleTerm for TRS-80 Models II, 12, and 16 (Z80 mode) running under TRSDOS. Both programs are "smart" terminal systems which means that they can do file transfers, emulate several different terminals, and, in general, provide a high level of support to the user. Both programs will also emulate Digital Equipment Corporation's (DEC) VT100 which means that full-screen capabilities will be accessible on the NAS/8040 and NAS/6650 through the network with a "CALL 3270", or on the VAXs.

In addition, both programs will operate over the Local Area Network at 9600 baud, and allow for individual tailoring to suit the needs of individual users. CROSSTALK, when used with the Texas Instruments Professional Computer has one further feature of merit: it will support the internal modem board at both 300 and 1200 baud. This means that users of the 8040 or the VAXs can use full-screen features at 1200 baud from dial-up installations.

CROSSTALK is available for the TIPC from many dealers and is produced by MICROSTUF, 1845 The Exchange, Atlanta, GA 30339,

phone: 404-952-0267. CROSSTALK is also sold for a variety of Z80 and 8088 machines in addition to the TIPC. TELETERM is produced by TELEXPRESS, INC., P. O. Box 217, Willingboro, NJ 08046, phone: 609-877-4900. The price for CROSSTALK is about \$156.00 and for TELETERM is about \$200.00.

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HP-2000 Backup Schedule

Routine system backups are scheduled to be performed at the following times:

8 a.m. Monday through Friday for approximately 20 minutes;
4 p.m. Friday for approximately 1.5 hours.

HP 2000 Class ID's Will Be Gone -- System Purge Coming!

On Saturday, May 26, the HP 2000 will be inaccessible all morning. This is because Class Id's assigned during the Spring semester will be deleted from the system and a SYSTEM PURGE will be performed. Therefore, if you have files on your class ID that you would like to hang on to, transfer them to your personal ID before this date. If you don't have a personal ID, you can apply for one at the Computing Center (with your instructor's approval). With the SYSTEM PURGE, any files not accessed since January 1, 1984 will be deleted from your ID. So, if you have files or programs that you have not used recently, be sure and access them before this date. To make sure that your files have been accessed you can perform a **GET** command on each program and any one of the commands **PRIVATE**, **PROTECT**, **LOCK**, and **UNRESTRICT** on a data file (ASCII or BASIC). If you have any questions, call the Computing Center at 565-2324.

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NAS/6650 Performance Statistics for April

SYSTEM	SCHEDULED OPERATING HOURS	PLANNED MAINT. HOURS	PLANNED PRODUCTION HOURS	UNPLANNED MAINT. HOURS	PRODUCTION HOURS ACHIEVED	SYSTEM UPTIME
MVS/JES2	720	1.70	718.30	5.89	712.41	99.2%
COMPLETEA	272	0.42	271.58	8.90	262.58	96.7%
ADABASA	720	2.17	717.83	10.97	706.86	98.5%

CPU availability equals approximately 99.8% uptime. Please consult the NAS/8040 Performance Summary for an explanation of cell entries. It can be found under the OPERATIONS section of this newsletter.

Lost productivity is calculated as the greatest amount of elapsed time that any one of the production systems was unavailable for scheduled operation. Lost productivity hours were contributed to by the following key causes:

CPU, Tape, and Disk Subsystems

1. Connect Power Control Cables to CPU	1.42 HOURS
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Unit Record and 3270 Terminal Equipment (IBM)

1. 3272 Terminal Control Unit Failure	8.10 HOURS
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Miscellaneous

1. Undetermined Causes for Systems Restarts	.93 HOURS
2. UPS Electrical Power Disruptions	2.63
3. COMPLETEA Program Failures	1.75
4. Reset CPU Clock to Daylight Saving Time	.36

TOTAL	5.67 HOURS
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GRAND TOTAL	15.19 HOURS
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Get a "Subscription" to BENCHMARKS

BENCHMARKS is a vital link between the NTSU Computing Center and the users of our facilities. It is important for all users of the computing facilities to maintain a file of these newsletters because they contain materials which will periodically update existing documents as well as information and suggestions on uses of OS/MVS, MUSIC, the VAX 11/780's, the HP-2000, and other resources available to NTSU students and faculty. To facilitate the dispersal of BENCHMARKS, ***** FREE ***** subscriptions are now available. To receive yours, send the following information to us either by "snail mail" (the post office or campus mail) or electronically, through the MAIL facility on MUSIC.

Name _____

Mailing Address _____

PLEASE GIVE A CAMPUS ADDRESS (NOT BOX) IF POSSIBLE! - It's Cheaper !!

PLEASE RETURN TO:

Academic Computing Services
The Computing Center
NT Box 13495
North Texas State University
Denton, TX 76203